



# **INTERNAL AUDIT CONTROLS EVALUATION FACILITIES MANAGEMENT**

September 2, 2003

Roanoke City Council Audit Committee  
Roanoke, Virginia

We have completed an audit of the Facilities Management department's Building Maintenance function. We performed the audit in accordance with generally accepted government auditing standards.

## **BACKGROUND**

The Building Maintenance function employs approximately 30 skilled tradesmen and trades helpers and has a departmental budget of approximately \$3.2 million. The employees in Building Maintenance are responsible for preventive and ongoing maintenance, remodeling and new construction projects, monitoring of contracted building maintenance services, and for providing support at various special events throughout the City. They maintain 167 buildings and facilities including fire stations, libraries, the Market Square Walkway, and the Commonwealth Building. They also maintain facilities in the parks such as the restrooms, fountains, field lights, and shelters.

The Building Maintenance function is organized into three work groups, each managed by a Maintenance Supervisor. One group performs the majority of the maintenance in the downtown facilities; a mechanical crew is primarily responsible for heating, electrical and plumbing work; and a structure crew works on painting, masonry and other light construction work. A Facilities Superintendent position was reinstated in fiscal year 2003 and is responsible for the day-to-day management over the three Maintenance Supervisors. The Superintendent reports to the Facilities Manager, who directs, plans, and coordinates the work of both Building Maintenance and Custodial Services. The Facilities Manager position is currently open and has not been filled by a permanent person since August 1, 2002. Support staff in the Facilities Management department includes a Work Coordinator, a Contract Services Coordinator, a Data Coordinator and an Executive Secretary. The Facilities Management department utilizes contracted services for the majority of elevator maintenance, fire suppression inspections, garage door repairs, major HVAC (heating/ventilation/air conditioning) repairs, as well as for other skilled work on an as-needed basis.

The Facilities Management department currently has no significant computer applications specific to facilities management. Work is assigned through a paper based work order process. The Work Coordinator has developed a database in which she inputs the work orders issued, labor and materials accumulated on a work order, and the date the work order is completed. There is also a series of computer disks that have fully developed preventive maintenance work orders which detail specific work that should be performed on specific facilities or equipment at a prescribed time. The Work Coordinator prints the applicable preventive maintenance work orders at the beginning of each month and provides them to the Supervisors who assign the work.

The current paper-based work order system was designed to provide limited cost accounting information related to building maintenance. The work order numbers are 19 digits long and include as part of that number, coding that identifies the type of work and the facility where the work was performed. The Work Coordinator keys completed work order data into the work order database and into a spreadsheet. The Department of Finance keys the data from the spreadsheet into the City's cost accounting system. Both systems provide only limited information and cannot effectively provide the information necessary to properly manage the maintenance function. The Facilities Management department recognized the need for a facilities management computer application in its approved business plan from 2001.

Another key component of the Facilities Management department's business plan is the Building Condition Assessment Program (BCAP). The BCAP produces a base line condition assessment that details the current condition, needed repairs/changes, and projected on-going maintenance costs for each City owned building. A consulting firm with expertise in performing assessments was engaged in 2000 and has completed 24 assessments to date. There are approximately 75 assessments remaining to be completed, including the assessments for all of the City's major downtown buildings. The Facilities Management department does not plan to schedule the remaining assessments until the department is better prepared operationally and fiscally to address the needs that have already been identified.

## **PURPOSE**

The purpose of this audit was limited to the following objectives:

- Evaluating the system of internal controls over the work order process
- Evaluating the level of preventive maintenance work currently performed

## **SCOPE**

Our audit focused on the system of internal controls in place as of January 31, 2003. We tested transactions occurring between July 1, 2002 and March 31, 2003.

## **METHODOLOGY**

We gained an understanding of internal controls relating to work order flow and preventive maintenance by reviewing available documentation and interviewing Facilities Management personnel. We documented our understanding by developing process outlines, narratives and flowcharts. Based on this understanding, we identified the risks and associated controls involved with work order processing and preventive maintenance. Based on our evaluation of the adequacy of those controls, we developed a test program that includes a combination of substantive and control test work.

Our test program included reviewing the reasonableness of labor and materials recorded on a sample of work orders, reviewing work order history for repeated similar repairs, reviewing cost accounting reports for time charged to blanket work orders, reviewing a sample of employee timesheets for acceptable levels of chargeable hours, and reviewing the status of preventive and routine maintenance work orders issued. We also visited several facilities to gain an understanding of general building condition, as well as to inspect repairs as shown on selected work orders.

## **RESULTS**

The Facilities Management department has an approved business plan that was reasonably well developed and provides needed direction for the department. The plan has identified the need for long range planning for facilities maintenance, the need for an improved organizational structure, and the need for computer automation to better manage the department's areas of responsibility. The department has made progress towards its goals through the building condition assessment program, by adding the Facilities Superintendent position, and by submitting a request for a work order system to be funded through the capital equipment and replacement program. The department is also promoting staff competency by requiring individuals to hold facilities management related certifications to qualify for the Facilities Manager position.

In our evaluation of specific processes related to work orders and preventive maintenance, we did identify control weaknesses which we communicated to management. The following are the material control weaknesses identified during the audit:

### **Finding 01 – Policies and Procedures**

The Facilities Management department does not have written policies and procedures for the building maintenance function. The department primarily operates based on immediate maintenance needs, work requests, and past experience. We found that the maintenance staff has been able to satisfy most customers' immediate needs. However, significant control issues related to operational efficiency and effectiveness are not addressed in this type of informal system. Some of the issues we identified during the audit were:

- There is no formal process for prioritizing work, which results in routine preventive maintenance being postponed in favor of more immediate requests. This

increases the risk that preventive maintenance will be deferred which could result in shortened useful lives for equipment, more costly repairs, and equipment operating at less than optimum efficiency.

- A program of preventive maintenance work orders with detailed instructions for tradesmen to execute exists for each calendar month. There are no procedures for updating this program to ensure new equipment and facilities are scheduled for preventive maintenance. This increases the risk that equipment won't receive proper preventive maintenance in accordance with manufacturer's specifications which could result in shortened useful lives for equipment, more costly repairs, and equipment operating at less than optimum efficiency.
- Maintenance Supervisor's have not been given any documented guidance regarding how they are to monitor labor and materials consumed by their staffs. The existing work order database was developed without defining clear goals for how it was to be utilized and without considering how its value as a management system might be maximized. This increases the risk that labor and materials will be inefficiently utilized.
- There are no asset records that provide maintenance specifications, maintenance schedules, repair histories, useful life projections, or warranty information. This can result in shorter useful lives for equipment, inadequate preventive maintenance, ineffective repairs, poor repair or replace decisions, and performing repairs that may be covered under warranty.
- The Facilities Management department does not have a process for assigning staff in such a way as to minimize labor costs. The department has historically assigned a trades helper to each tradesman without regard to the nature of the work requests that team may be assigned. Our review of the work order data available indicated that this practice has caused labor costs to be excessive for jobs where one person was all that was required.

During the course of our test work, we determined that the data in the work order database was incomplete. This fact, combined with the lack of formal asset records prevented us from being able to determine with any certainty that the risks noted above were realized as a result of not having written policies. For example, we could not determine with any confidence the exact number of preventive maintenance work orders that were deferred or not completed at all.

### **Recommendation 01 – Policies and Procedures**

The Facilities Management department will develop and document a comprehensive maintenance policies and procedures manual. This manual should cover asset procurement, preventive maintenance, inventory controls, labor standards and controls, asset records, maintenance records, and all aspects of reporting. Management should include supervisors and tradesmen in the process to develop procedures. These employees need to be involved in the process to help ensure resulting policies and procedures are practical and support the employees in positive ways to address their

day-to-day challenges. It is also an opportunity to enlighten staff about the purpose of and need for better controls.

### **Management Response 01 – Policies and Procedures**

A policy and procedures manual will be developed. The manual will include asset procurement, preventive maintenance, inventory controls, labor standards and controls, asset records, maintenance records, and reporting. The development of the manual will be a multi-step process that includes the following:

- Training supervisory and support staff on identifying and documenting policies and procedures, including how to flowchart and document workflows.
- Reviewing draft document with supervisors and line staff to not only ensure its accuracy but also to be certain it is practical and to identify possible process improvements.
- Training staff on new policies and procedures.
- Incorporating adherence to the new policies and procedures into individual performance plans as appropriate.

The target date to have a complete set of policies and procedures in place is 8/1/04.

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### **Finding 02 – Blanket Work Orders**

The Facilities Management department utilizes a series of blanket work order numbers to be used for commonly completed tasks. Some blanket work orders are targeted at specific types of repairs such as generator work or HVAC work, while others are for general maintenance and minor repairs. The original intent for using blanket work orders was to allow maintenance staff to perform simple repairs immediately without having to wait for a formal work order. The rule of thumb was that repairs taking less than 30 minutes could be performed under a blanket work order. Tradesmen were expected to complete a service call report that documented the time and materials for each repair charged to a blanket work order. The use of blanket work orders was to be limited and supervisors were to monitor labor and materials based on service call reports.

Through a review of cost accounting reports and employee time sheets, we determined that a significant number of labor hours have been charged to general blanket work orders and in many cases, an employee's entire day was charged to a general blanket work order. Based on interviews we conducted and our review of the records, we found facilities such as the city jail can have daily lists of minor repair items that can take as many as three staff to address in a given day. However, we found that service call reports are frequently not completed to document the work and that repairs that escalate into more significant time and materials remain under the blanket work order. This increases the risk that labor and materials will be inefficiently utilized.

**Recommendation 02 – Blanket Work Orders**

The Facilities Management department plans to develop and document standards for utilizing blanket work orders. The types of repairs that should qualify for being charged to a blanket work order should be defined with the help of the maintenance supervisors and staff. Tradesmen and trades helpers should be expected to account for their time under blanket work orders by some formal means such as the service call report. Maintenance Supervisors should be expected to monitor time and materials expended by their staffs as part of their responsibilities.

**Management Response 02 – Blanket Work Orders**

The use of blanket work orders will need to continue in some areas. However, going forward as of 8/18/03, the Key shop and Welding shop will cease to use them. All of their activities will be assigned individual work orders.

The major facility where a blanket work order is used is the City Jail, whose maintenance activities are performed by a Downtown work crew. The array of tasks performed at the Jail is unique to a Jail facility, and they require their own set of procedures. Each day, the Crew Supervisor receives a “punch list” of maintenance activities to perform there. Facilities Management will work with the Jail staff to redesign their punch list by 8/18 to include an area under each activity where times can be recorded. The Crew Supervisor will work with his staff to document the time spent each day by each crew member on each activity on the punch list. This will help to ensure accurate tracking of the time and materials spent performing each maintenance task there. “Wait time” will also be tracked.

Building Maintenance will develop separate procedures for the use of blanket work orders in the other facilities so that staff personnel will more accurately account for their time. These will be defined by 10/31/03.

However, the steps that will be taken above assume the continued use of a manual work order system. The additional recordkeeping that will be needed to comply with the audit recommendation will ultimately necessitate an additional staff person. This individual is needed to help with monitoring work orders and their accountability, asset procurement, tool inventory, and cost accounting. General Services will recommend such a position in the next budget cycle. In the short-term, temporary help may be hired to assist with the recordkeeping. The ultimate goal will be to implement an automated work order system that will reduce the level of manual tracking needed and provide more accurate labor reporting information overall.

**CONCLUSION**

Based on the results of our audit work, we conclude that the overall design of the system of internal controls should be strengthened to provide greater assurance that maintenance and repair work is completed in an efficient manner.

We want to thank management and staff in the Facilities Management department, Department of General Services, and Department of Management and Budget for their cooperation and assistance during this audit.

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